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**Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/046,121 03/20/98 HALL

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EXAMINER

LM02/0630

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ART UNIT

PAPER NUMBER

2713

DATE MAILED:

06/30/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/046,121

Applicant(s)

Hall et al.

Examiner

Allen Wong

Group Art Unit

2713



☐ Responsive to communication(s) filed on \_\_\_\_\_

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 1-38 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-5, 7, 9, 11-13, 15, 16, 24-26, 28, and 37 is/are rejected.

☒ Claim(s) 6, 8, 10, 14, 27, 29, and 30 is/are objected to.

☒ Claims 17-23, 31-36, and 38 are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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## DETAILED ACTION

### *Election/Restriction*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
    - I. Claims 1-16, 24-30 and 37, drawn to adaptive encoding, classified in class 382, subclass 239.
    - II. Claims 17-23, 31-36 and 38, drawn to determining random noise, classified in class 375, subclass 240.32.
  2. The inventions are distinct, each from the other because of the following reasons:

Inventions in group I and group II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, the groups have separate utility in that random noise has separate utility such as image enhancement. See MPEP § 806.05(d).
  3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
  4. During a telephone conversation with Kevin P. Radigan on 6/8/00 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-16, 24-30 and 37.
- Affirmation of this election must be made by applicant in replying to this Office action.

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Claims 17-23, 31-36 and 38 withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

7. Claims 1-3, 7, 9, 24, 25, 28 and 37 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by .

Regarding claim 1, discloses a method for encoding a frame comprising a plurality of macroblocks, said method comprising:

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(I) determining a macroblock activity level (col.8, lines 27-35; an activity level is measured which is the same as the determination of an activity level);

(ii) determining when said macroblock activity level exceeds a predefined threshold (see figure 3; note that a threshold is set and a determination means must exist to determine when the activity threshold is passed so that a course of action will be taken due to the determination of whether the macroblock activity level exceeds a predefined threshold), wherein said macroblock activity level exceeding said predefined threshold indicates that said macroblock is associated with said noisy portion of said frame; and

(iii) adjusting encoding of said macroblock when said macroblock activity level exceeds said predefined threshold to conserve bits used in encoding said macroblock (see figure 3; note that if a threshold is exceeded, then intercoding is used which thereby reduces the bit-rate and conserve bits used in encoding said macroblock) and thereby save bits otherwise used to encode said noisy portion of said frame.

Note claims 2, 3, 24, 25 and 37 have similar corresponding elements.

As for claims 7 and 28, Uz discloses motion estimation process done on said macroblock (col.11, lines 20-26).

Regarding claim 9, Uz discloses the determination of adjusted quantization level for use in encoding a macroblock (col.12, lines 50-53).

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*Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4, 5, 11-13, 15, 16 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Uz (5,682,204).

Regarding claim 4, Uz discloses the comparison of "total activity of a frame macroblock" (col.5, lines 62-63). However, Uz fails to disclose the comparison of a minimum activity level of said order with a next to minimum activity level of said order to derive said activity level for said macroblock as disclosed by the applicant. Therefore, it would have been obvious to one of ordinary skill in the art to compare the minimum activity level of said order with a next to minimum activity level of said order to derive said activity level for said macroblock for encoding accuracy and efficiency.

Regarding claim 5, Uz does disclose the calculation of average activity (col.11, lines 12-13) in frame macroblocks. However, Uz fails to teach the comparison of a minimum activity level with an average activity level in said multiple blocks of said macroblock. Therefore, one of ordinary skill in the art would obviously do a comparison of a minimum activity level with an average activity level in said multiple blocks of said macroblock for improving encoding accuracy and efficiency.

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As for claim 11, it is obvious that said frame is comprised of one frame of a sequence of frames.

As for claims 12 and 13, Uz discloses a measure of a frame complexity value (col.12, lines 60-64). However, Uz fails to teach the calculation of a complexity threshold and the comparison of said frame complexity value. Therefore, it would have been obvious to one of ordinary skill in the art to calculate a complexity threshold from a group of frames, since an activity threshold can be calculated, and a comparison of complexity values is obvious to do from a group of complexity values for improving encoding accuracy and speed.

As for claims 15 and 16, one of ordinary skilled in the art would obviously recognize that all digital devices require the flagging of ones and zeroes since digital logic dictates the well known use of a binary system in digital communications.

Regarding claim 26, Uz does teach the determination of an activity level (col.8, lines 27-35; the measure of an activity level is the determination of an activity level). However, Uz fails to disclose the comparison of a minimum activity level of said order with a next to minimum activity level of said order to derive said activity level for said macroblock as disclosed by the applicant. Therefore, it would have been obvious to one of ordinary skill in the art to compare the minimum activity level of said order with a next to minimum activity level of said order to derive said activity level for said macroblock for encoding accuracy and efficiency.

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*Allowable Subject Matter*

10. Claims 6, 8, 10, 14, 27, 29 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Contact Information*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (703) 306-5978. The examiner can normally be reached on Mon.-Thurs. 9-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (703)305-4856.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.




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AW

June 28, 2000



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